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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,466	09/15/2006	Keiji Ono	Q94344	3200
23373 7590 01/25/2010				
SUGHRUE MION, PLLC				
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800				
WASHINGTON, DC 20037				
EXAMINER				
KOSLOW, CAROL M				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
01/25/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/575,466

Applicant(s)

ONO ET AL

Examiner

C. Melissa Koslow

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-7, 9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5-7, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

This action is in response to applicants' amendment of 20 October 2009. The amendments to the claims have overcome the objection over claim 8 and the art rejection over U.S. patent application publications 2004/0041220 and 2004/0056990. Based on applicants arguments, the 35 USC 102(f) rejection is withdrawn. Applicant's arguments have been fully considered but they are not persuasive. Upon reconsideration of the claimed subject matter, the remaining art rejection has been changed. The action has not been made final since the rejection could have been in the previous action.

Applicants are put on notice that depending on the final form of the claims an interference may be set up between this application and the claims of U.S. patent 7,239,085.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 5, 6, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 7,026,755.

This reference teaches a phosphor composition comprising a silicate phosphate and an aluminate phosphor. The reference teaches a composition comprising 1-30 wt% of a blue phosphor and 20-89 wt% of a red phosphor having the formula $M_3MgSi_2O_8:Eu,Mn$, where M is Ba or a mixture of Ba and Sr. The ratio of silicate to blue phosphor is 40:60 to 99:1, which overlaps the claimed ratio. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. The blue phosphor in both applications can be $BaMgAl_{10}O_{17}:Eu^{+2}$. While the reference does not teach the amount of

europium that substitutes for the barium in $\text{BaMgAl}_{10}\text{O}_{17}:\text{Eu}^{+2}$, it is known in that art that this amounts is 0.05-0.2. This amount falls within the ranges of claims 5 and 6. While the reference does not teach the relationship between the phosphor particles in the suggested mixture, it is known in the art that the phosphor particles in the disclosed light emitting device should be uniform so that the light emitted by each particle is uniform and consistent. Thus one of ordinary skill in the art would have found it obvious to use particles which all have essentially the same primary average particle size, which means the average primary particle diameter of the aluminate phosphor is about the same, or 1 times, the average primary particle diameter of the silicate phosphor. The reference suggests the size ratio of claim 7. Column 9, lines 10-14 teaches the disclosed blend can be used in a plasma display panel, which is a vacuum ultraviolet excited light emitting device. The reference suggests the claimed phosphor and device.

The insertion of claim 2 into claim 1 does not overcome the rejection since, as discussed above, the reference suggests a composition where the weight ratio of disilicate phosphor to aluminate phosphor overlaps that claimed. It is noted that claim 1 does not limit the phosphor composition to consist of A^1 and B^1 , but the a composition that comprises A^1 and B^1 , where the weight ratio of A^1 to B^1 is 5:95 to 95:5. Thus the claimed composition can contain other phosphors or other compounds besides A^1 and B^1 .

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 7,026,755 in view of WO 01/79362.

U.S. patent 6,855,196 is the national stage application of WO 01/79362 and thus is the translation for WO 01/79362.

As discussed above, U.S. patent 7,026,755 suggests a plasma display panel comprising a phosphor composition comprising $M_3MgSi_2O_8:Eu,Mn$, where M is Ba or a mixture of Ba and Sr and $BaMgAl_{10}O_{17}:Eu^{+2}$, where the weight ratio of silicate phosphor to aluminate phosphor is 40:60 to 99:1. It does not teach a paste of this composition. WO 01/79362 teaches the phosphor layers in plasma display panels are produced using a paste comprising the phosphor, a solvent and a binder. One of ordinary skill in the art would have found it obvious to form such as paste to produce the panel suggested by U.S. patent 7,026,755. Therefore the claimed paste is suggested by the references.

Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

This is no suggestion or teaching in the cited prior art of a phosphor composition comprising an aluminate phosphor and a disilicate phosphor having the formula $(M_{1-a}Eu_b)(M'^{+}_{1-b}Mn_b)Q_2O_6$, where M is Ca, Ba or at least two of Ca, Sr and Ba, M' is Mg and/or Zn, q is Si and/or Ge, $a=0-0.5$, $b=0-0.5$ and $a+b>0$ or having the formula $Ca_{1-c-d}Sr_cEu_dMgSi_2O_6$, where $c=0-0.1$ and $0< d \leq 0.1$, where the weight ratio of disilicate to aluminate is 5:95 to 95:5.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/
January 21, 2010

/C. Melissa Koslow/
Primary Examiner
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